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Moving Towards an Outcomes-Based Curriculum Model in Design Education: an Action Research Study at OCAD University

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Abstract

This paper is in preparation for the research that I will be conducting as a PhD Candidate at the Ontario Institute For Studies in Education (OISE), University of Toronto entitled "Implementation of Outcomes-Based Education at the Ontario College of Art and Design (OCAD) University: An Action Research Study of an Interdisciplinary Design Course" under the supervision of Professor Katharine Janzen. In this discussion, I intend to first establish the background, the context and the purpose of my research. Then I review the principles of outcomes-based education with an emphasis on design pedagogy. Finally, I will lay the ground for the action research study that I intend to conduct in an interdisciplinary design course that I teach at OCAD University (OCAD U) through the identification of the theoretical framework, research questions and research methodology of my study as well as its practical application and future contribution to the field of study.

Background

The face of design and design education is changing in the 21st century as designers are embracing complexity by moving from 'makers of things' to that of 'strategic thinkers' with the aim of providing society with human-centered design solutions within ever-increasing high-tech and competitive business environments. "The advance of communication technology has broken down the physical barriers and has opened the design profession to the full effect of globalization" (Visocky O'Grady, J. & K., 2013, pp. 2-5). The question is "How are design educators adapting their teaching practice to prepare students for the new requirements of the marketplace?"

Largely in response to the public demand for demonstrated accountability and the globalization of labor markets, the Council of Ontario Universities (COU) established the Council on Quality Assurance in 2010 in order to assure the quality of both undergraduate and graduate university programs and degrees offered in the province. In Ontario the COU Quality Assurance Framework (2012) requires that all institutions implement an Institutional Quality Assurance Process (IQAP) that is consistent with their institutional mission statements and degree level expectations. "It is the identification, measurement, and designation of qualifications that insures transparency of the credential to the benefit of the students/graduates and their institutions, as well as to future national and international employers" (Lennon, 2010, p. 3).

Furthermore, the articulation of intended learning outcomes or Undergraduate Degree Level Outcomes (UDLEs), or the Graduate Degree Level Outcomes (GDLEs) at the course or program level provides one measure, a benchmark, for one important aspect of the mandate of higher education, that is, what the students are expected to be able to demonstrate in terms of knowledge, skills and attitudes gained upon completion of the course or program. Educators are free to articulate, within the broader framework of the UDLEs/GDLEs benchmarks, what they expect the students

to have learned at the end of their course based on the expected learning outcomes articulated at program level. This flexible framework enables educators to have the freedom to plan creative teaching-learning environments and develop innovative curriculum models.

Context and Purpose of the Study

Established in 1876 as the Ontario School of Art, OCAD U became the first art school in Canada dedicated to art education. In 1996, its name changes to the Ontario College of Art and Design, which later will be recognized as OCAD University (2010). OCAD U is a publicly assisted post-secondary institution that is located in downtown Toronto. As the largest art, design and media university in Canada, OCAD University offers 17 undergraduate and 6 graduate programs. In the academic year 2013-2014, OCAD U has registered 4476 undergraduate and 257 graduate students from 40 countries around the world. OCAD University was granted university status in 2002. (OCAD University Website)

In the past few years, OCAD U has witnessed tremendous changes in terms of institutional leadership and innovative programming with the goal of becoming a hub of art and design education in Ontario. Some of the most important aspects of this change are the addition of new degree programs and the establishment of the Faculty and Curriculum Development Centre (FCDC) within the Centre of Innovation in Art and Design Education (CIADE), "providing expertise and support in the creation and implementation of effective teaching and learning strategies in studio, classroom and technology-enabled learning environments" (OCAD University Website). Most recently, Faculty of Industrial Design Program, in compliance with the requirements of COU Quality Assurance Framework and IQAP's program review, have developed a competency-based curriculum model with the aim of defining learning outcomes that display the value of design education at OCAD U. As a Sessional Instructor in the Faculty of Design, with seven years of teaching experience in Ontario and previous international teaching experience in the field of design, I intend to explore the different aspects of the implementation of an outcomes-based education (OBE) curriculum framework in design education through a reflective study of the implementation of OBE in my own teaching practice as well as in interaction with my colleagues across the institution.

I believe that my experience as I implement outcomes based education in the course that I teach and the findings of this action research study will support me in my current teaching practice and will help me to contribute effectively to the facilitation of the transitional process at both program and institutional levels at the site of study. The dissemination of the findings of this study will also identify best practices at OCAD University, with a regard to a possible generalization of the know-how and the development of a new model of scholarship of teaching and learning within a design studio environment.

Literature Review

OBE is not a new educational practice but has been newly adopted by some higher education systems around the world such as Europe, Australia, Canada and the US in order to ensure quality, transparency and compatibility among the credentials. Furthermore, outcomes-based learning is being recognized as the most suitable pedagogic model for the market-driven post-secondary systems of today's knowledge based economy. This innovative learning model provides institutions and governments with the best tools for quality measurement and credit transfer nationally as well as internationally.

Adamson et al (2010) explain, "At the beginning of the 90s, an EU pilot project showed that study programs were much easier to compare if they were described in terms of outcomes, instead of inputs" (p. 4). That study led to the development of a 'European Higher Education Model' through what has become known as the 'Bologna Process', with OBE as its core component. The growing importance of learning outcomes defined by the European Commission as "written statements of what a learner is expected to know, understand and/or be able to do at the end of a period of learning," created the context for the development of learning outcome frameworks not only in European countries but around the world. "Learning outcomes is something that the Bologna process has been working on for a decade. Some countries such as Britain moved to a leaning-outcomes approach some years ago while others are still addressing the issue" (Harvey, 2008, p.19).

What is outcomes-based education? At best OBE can be described as an eclectic educational philosophy taking the best from previous approaches and framing it in a new visionary system" (Malan, 2000, p. 28). As stated by Killen (2000):

> *Outcomes-based education does have its roots in a variety of pedagogical studies such as earlier work on educational objectives (e.g., Mager, 1962), competency-based education (e.g., Franc, 1978), mastery learning (e.g., Block, 1971; Bloom, 1973) and criterion-referenced assessment (e.g., Masters & Evans, 1986), but it has synthesized and extended all these ideas. (p. 5)*

However, Malan (2000) recognizes the positives sides to OBE and endorses Spady's vision of OBE as 'a systems transformation approach'. "There are many positive sides to OBE, as its transformational approach indicates… It forces uncoordinated and laissez-faire educational planning, managing and teaching practices into the background and introduces strategic educational planning that is aimed at achieving results" (p. 28). According to Killen (2000), an OBE curriculum framework is a 'total approach' that places learning at the center of education in a way that all decisions are made with the ultimate goal of creating a successful learning environment.

> *In this paradigm, education system and classroom practices should be organized around what is essential for all students to be able to do successfully at the end of their learning experiences. This means*

> *starting with a clear picture of what is important for students to be able to do, then organizing the curriculum, instruction, and assessment to make sure this learning ultimately happens.* (Spady, 1994, p.1)

An overview of the impact of OBE by Killen on the mechanism of teaching and learning in post-secondary education shows the dominance of four principles that are clarity of focus, designing back, high expectations and expanded opportunities. 'Clarity of focus' as the first principle of OBE directs the attention of teachers towards learners' successful achievement of outcomes instead of the mere acquisition of knowledge practiced within the traditional teaching-centered paradigm where 'teaching effectiveness is generally measured by the student's knowledge'. In this way, teachers become 'facilitators of learning' rather than 'transmitters of knowledge' who help students to find, understand and analyze relevant information, and to transform it into their own personal knowledge.

The second principle of OBE is 'designing back' that starts from a clear articulation of course level learning outcomes that in turn should be meaningful, significant and appropriate, and aligned with the overall outcomes of the program of study. Therefore, teachers are not concerned with 'covering the curriculum' that is often linked very closely to a subject-based textbook and practiced within a 'content-based programming' where the selection of contents takes priority over learning outcomes and creative teaching strategies. The third principle establishes 'high expectations' that encourage students to become deeply engaged with the learning process and transform them to 'effective learners'. Setting high expectations and challenging standards of performance don't refer to creating impossible tasks and activities but rather motivating students to be purposeful, useful and challenging in order to achieve success. This view is based on the idea that successful learning promotes more successful learning. The fourth principle maintains that teachers must aim to provide all learners with 'expanded opportunities'. This principle is based on the concept that not all learners have the ability to learn the same things in the same way and in the same time. In this context where student's learning becomes the main objective of teaching, what really matters is that students learn the important things not that they learn them in a specific manner or by some arbitrary point in time.

A clear understanding of knowledge, skills and competencies as key constructs of learning outcomes, and the interconnections between them is central to the definition of learning outcomes. Based on the European Qualification Framework (EPC 2008, p. C111/4), while 'knowledge' is defined as 'the outcome of the assimilation of information through learning' and 'represents the body of facts, principles, theories and practices that is related to a field of work or study; skills' has been recognized as 'the ability to apply knowledge and use of know-how to complete tasks and solve problems; and competence' is being defined as 'the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development'. (Savic & Kashef, 2013)

In this context, Bloom's taxonomy are the most quoted taxonomies in the educational field and provide simple, precise, effective and measurable hierarchical structural categories of educational objectives that are incorporated within three intellectual domains: cognitive, affective and psychomotor. (Savic & Kashef). Bloom (Bloom et al., 1956) has placed utmost emphasis on cognitive domain with six categories of educational objectives that can coexist during the learning process: knowledge, comprehension, application, analysis, synthesis, and evaluation. Blooms and associates (Krathwohl et al., 1973) have underlined five main categories within the affective domain, which represents emotional aspect of behavior in learning: receiving phenomena, responding to phenomena, valuing, organizing, and internalizing/personalizing value system. While the psychomotor domain hasn't been tackled directly by Bloom himself but it has been analyzed and visited by other educational scholars.

Each profession requires specific sets of knowledge, skills and competencies. The raison de vivre of outcomes-based education is in its adaptable pedagogical framework, which has the capacity to bridge education to the real life experience as well as the professional career that one chooses to pursue. One of the major points of criticism about Outcomes-Based Education that has been mostly emphasized by opposition in the US is the question of what 'significant outcomes' should be incorporated into a given curriculum. Therefore, the question is "What are the significant outcomes that should be specifically considered in the planning of a design-based curriculum?"

The International Council Societies of Industrial Design (ICSID), an organization that brings together professional associations of designers worldwide offers this definition of design on its website: design is a creative activity whose aim is to establish the multi-faceted qualities of objects, processes, services and their systems in whole life cycles. Design is the central factor of innovative humanization of technologies and the crucial factor of cultural and economic exchange. The definition of design profession and the nature of studio-based education in design suggest that some very important cognitive terms such as 'creativity', 'imagination' and 'originality' should be considered within an Outcomes-Based Education implementation process. "How do we enable students to understand the concept of creativity and how do we measure them?" (Davies, 2007, p. 3). Therefore, in order to set up a situation, which enables creativity to occur, educators need to rethink the role that creativity plays in their curriculum and then examine their own understanding of creativity as an element of their own profession, as part of their own approach to teaching, and as part of their academic discipline.

If we recognize that the OBE model represents a holistic and total approach to teaching and learning, the framework of 'constructive alignment' proposed by Biggs (1996) suggests a strong basis for a systematic development of implementation process across the whole institution, from classroom level to administrative procedures and regulations. What is 'constructive alignment'? "Constructive alignment is a marriage between a constructivist understanding of the nature of learning and an aligned design

for teaching that is designed to lock students into deep learning" (Biggs, p. 54).

Biggs (2007) then proposes four stages of implementation: a) description of the intended learning outcomes (ILOs) in the form of a verb (learning activity), its object (the content) and specification of the context and a standard the students are to attain; b) creating a learning environment using teaching/learning environment activities (TLAs) that address that verb and therefore are likely to bring about the intended outcome; c) using assessment tasks that also contain that verb, thus enabling the teacher to judge with the help of rubrics if and how well students' performances meet the criteria; d) transforming these judgments into standard grading criteria.

The implementation of an outcomes-based education, which promotes the practice of constructive alignment between outcomes, learning activities and assessment tools needs an environment where all stakeholders (teachers, students and the institutions) are engaged in the process of transformative reflection and constant action. Each of these participants reflects in interaction with the others in three domains: teacher and student, teacher and institution, student and institution that would have built-in quality enhancement and mechanisms for not only assuring quality but for enhancing quality. (Biggs, 2007, pp. 247-249)

Building a learning community that enhances the ownership of curriculum planning and reflective practice among its faculty will establish new opportunities for meaningful dialogue among peers, and facilitate the collective efforts of the institution in responding to the demand of accountability from accreditation agencies as well as the public inquiry about the quality of teaching and learning in higher education.

Research Design: Theoretical Framework, Research Questions and Research Methodology

Theoretical Framework

The research methodology of my study is a qualitative approach using 'Action Research' as my strategy of inquiry as informed by Habermas' theory of communicative action, which promotes dialogue and critical inquiry, and the concept of 'reflective practitioner' introduced by Schön. Furthermore, it is based on Dewey's studies of 'human experience as producer of knowledge'. Habermas introduces the concept of 'communicative action' "in which actors in society seek to reach common understanding and to coordinate actions by reasoned argument, consensus, and cooperation rather than strategic action strictly in pursuit of their own goals" (Habermas, 1984, p.86). The communicative action theory emphasizes on 'reaching consensus through public dialogue' and 'replacing the model of the technical expert with one of the reflective planner' through reflective dialogue- what Schön calls 'reflection-in-action' (Bolton, 2005, pp. 2-17). The critical and emancipatory aspects of action research position the practitioner as both subject and object of the research, at different moments, "by adopting and alternating between the

contrasting attitudes of practitioner and critical, and self-critical observer of her or his own practice" (Kemmis, 2006, p.94). While the most important aspect of critical action research is to improve the self-understanding of the practitioner and improve the outcomes of his or her actions, the primary objective of action research is "to liberate the human body, mind and spirit in the search for a better, free world" (Reason, 2006, p. 2).

Freire emphasizes 'dialogue' as 'central to human life', an 'act of creation' and 'a vehicle for change' which 'combines both reflection and action leading to praxis'. He points out the important role of conversation as a way of knowing and believes that dialogue "helps humans understand and investigate the world from their own web of reality while concurrently working to awaken them as conscious beings" (Freire, 1990, p.89). My selected strategy of inquiry is an emic (insiders) view where I take the role of a participant-observer. Therefore, I position myself as an insider who studies her self-practice and collaborates with other insiders with the ultimate goals of professional development and empowerment, and as well positive contribution to her professional setting. An action research study of my own teaching that will include cycles of planning, acting, observation of action and critical reflection on the course of actions will help me to question my own beliefs, values and assumptions with a commitment to seeking out solutions to the recurring issues of a learning-centered course design and management.

Research Questions

This study aims to answer the following specific research questions:

1. How do I develop learning outcomes that are consistent with required design competencies?
2. How do I create and implement an effective constructive alignment of 'intended learning outcomes,' 'learning activities' and 'assessment tools' in my course?
3. How do I effectively evaluate my teaching practice?
4. How do I improve my teaching based on critical reflection and self-evaluation?
5. How do I contribute to the implementation of OBE at institutional level(s)?

Research Methodology

This research is an action research study of my own teaching practice through the implementation of the principles of outcomes-based education in the 'Design (As) Research' course that I teach at OCAD University. This is a 300 level undergraduate course that design students undertake for completion of their degrees and is being offered during the intensive summer semester. Strategic research enables designers to understand the process of change and create the future by analyzing the emerging patterns and understanding future trends. Students learn how to generate and refine ideas through creative methods; ask strategic research questions, set research goals and objectives; develop research frameworks; understand research ethics,

credibility and validity; conduct research in order to understand users and their contexts through ethnographic research, questionnaires development, surveys and competitive analysis; analyze and synthesize their findings and finally how to document and communicate their findings using effective presentations methods. The ultimate goal of strategic research in design is to translate research findings into design solutions. In this order, students learn how to create the flow from research to design within the bigger context of the design process. In my study, I will reflect on teaching strategic research that brings value to industry and is based on competency-based learning outcomes that are clear, measurable and aligned with the future needs of design graduates in their practice.

In this regard, using action research as my method of inquiry will first enable me to share my knowledge of the scholarship of teaching and learning acquired through a critical analysis of the literature with my colleagues who are facing the same challenges, and secondly will support me in the improvement of my teaching practice by becoming aware of best practices in our institution. Therefore, this study will involve two concurrent phases that are both iterative (repeated cycles) and incremental (smaller portions at a time that build on each other): Phase A- Critical Dialogue with Self and Phase B- Critical Dialogue With the Institution. I intend to use the six cyclical steps process of 'Observe, Reflect, Act, Evaluate, Modify, Move in new direction' known as 'action-reflection proposed by McNiff & Whitehead (2010) for my inquiry of both Phase A and Phase B. As depicted in Figure 1, Phase B that constitutes the Critical Dialogue with the Institution will inform and get informed from Phase A, which intends to create a Critical Dialogue with Self. While Phase A is a case study of my own teaching practice, in Phase B, I intend to take action in creating a conversation with my colleagues and decision-makers at different institutional levels about the implementation of outcomes-based education at OCAD University. The participants of Phase B are my colleagues who are teaching and/or serve in administration at OCAD U, and willing to share their experience and ideas about the different steps of the implementation process within our institution. For this purpose, I intend to build an effective collaboration with different divisions of the university and most specifically the FCDC in developing critical conversations with the faculty across the university. I believe that the findings of this survey will support me in my current teaching endeavor and will help me to play a more effective role in the facilitation of the transformational process at both course level and institutional level. It will also provide leaders and policy-makers in higher education at different operational levels with a better understanding of the existing issues regarding the planning of the integration of a learner-centered approach to design curriculum.

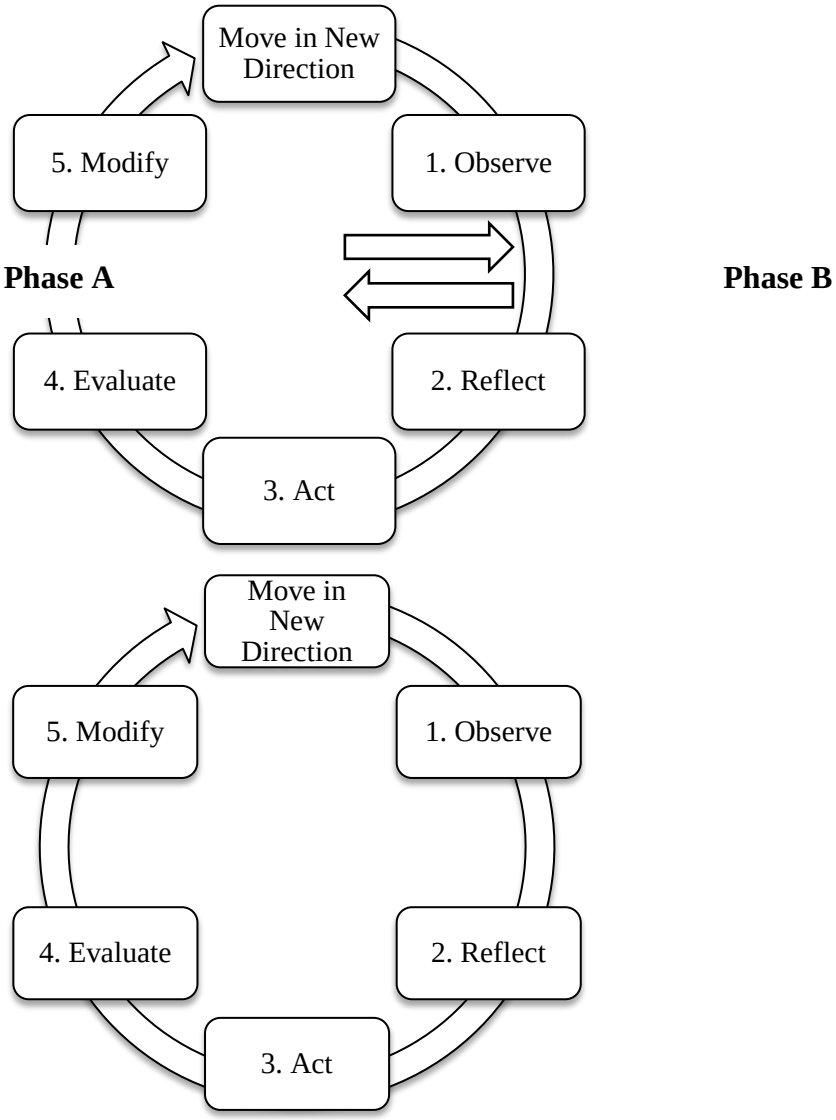

Figure 1. Concurrent Phase A and Phase B of Action-Reflection Cycle Proposed by Mousavi Hejazi (2014)

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